

What is claimed is:

- 1 1. A method for permitting communications between a first communication node and a
 2 second communication node, comprising:
 3 receiving a signaling message from said first communication node;
 4 querying a first Communications Node Database for information about said first
 5 communication node in response to said signaling message;
 6 querying a second Communications Node Database for information about said
 7 second communication node in response to said signaling message;
 8 making a decision whether said signaling message needs to be modified; and
 9 modifying said signaling message before it is transmitted to said second node in
 10 response to said decision.
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- 1 2. The method of claim 1 wherein said signaling message is a request to connect,
 2 modify, or disconnect communications.
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- 1 3. The method of claim 1 wherein said communications comprise: Voice over IP; video
 2 over IP; instant messaging; access to conferencing bridges connecting multiple
 3 communication nodes; and access to communications servers for deposit or retrieval
 4 of stored communications.
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- 1 4. The method of claim 1 wherein said signaling message comprises a registration
 2 request; an authentication request; a connection request, a request to modify a
 3 connection, and a request to terminate a connection.
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- 1 5. The method of claim 1 wherein said step of modifying comprises changing at least
 2 one of: a source address; a destination address; a signaling protocol; a signaling
 3 method; adding a field; deleting a field; a syntax; a punctuation; a spelling; and said
 4 communications signals.
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- 1 6. The method of claim 1 wherein said first database and said second database are a
 2 single database.
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- 1 7. The method of claim 1 further comprising a step of grouping communication nodes
 2 into categories, and
 3 wherein each category requires a different protocol remediation; and

4 each category uses different signaling addresses for sending messages to a
5 signaling mediation agent.

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1 8. The method of claim 7 wherein said signaling addresses comprise a port number.

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1 9. The method of claim 7 wherein said categories are based on a specified set of
2 signaling messages requiring remediation.

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1 10. A method for authorizing communications between a first communication node and a
2 second communication node comprising:

3 receiving a registration request message from said first communication node;

4 querying a first database to authenticate an identity of said first
5 communication node;

6 querying a second database to determine which communication services said
7 first communication node is authorized to use;

8 querying a third database for signaling addresses of registration nodes for said
9 authorized communication services;

10 querying a fourth database for additional information about said registration
11 nodes;

12 making a decision whether said registration request message needs to be
13 modified in response to querying said first database, querying said
14 second database, querying said third database, and querying said
15 fourth database; and

16 modifying said registration request message before it is transmitted to said
17 registration node in response to said decision.

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1 11. The method of claim 10 wherein said first database, said second database, said third
2 database, and said fourth database are a single database.

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1 12. The method of claim 10 wherein said communications comprise: Voice over IP;
2 video over IP; instant messaging; access to conferencing bridges connecting multiple
3 communication nodes; and access to communications servers for deposit or retrieval
4 of stored communications

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1 13. The method of claim 10 wherein said communication services comprise: access to
2 cellular networks; access to a PSTN; access to conferencing services; and access to
3 messaging services.

1 14. A method for permitting communications between a first communications node
2 attached to a first communications network, a second communications node attached
3 to a second communications network, and a network address translation device on an
4 interconnection path between said first communications network and said second
5 communications network, comprising:

6 receiving, by a signaling agent, a signaling message having an original source
7 address and an original destination address from one of said first and
8 second communications nodes on said respective first and second
9 communications network, a request for communications with an other of
10 said first and second communications nodes on said respective first and
11 second communications networks;

12 determining, by said signaling agent, said original source address and a translated
13 source address of said signaling message transmitted to said other of said
14 first and second communications nodes by said network address
15 translation device;

16 inserting, by said signaling agent, in said signaling message from said one of said
17 first and second communications nodes, an external source address for
18 receiving signaling messages from said other of said first and second
19 communications nodes to create a modified message; and

20 forwarding, by said signaling agent, said modified message to said other of said
21 first and second communications nodes.
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1 15. The method of claim 14 further comprising learning how said network address
2 translation device translates said original source address into said translated source
3 address for messages and making changes to said translated source address provided
4 in said modified message.
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1 16. A method for permitting communications between a first communications node
2 attached to a first communications network, a second communications node attached
3 to a second communications network, and a network address translation device and a
4 firewall device on an interconnection path between said first communications
5 network and said second communications network, comprising:

6 receiving, by a signaling agent, a signaling message having a destination address,
7 from one of said first and second communications nodes on a respective
8 first and second communications network, a request for communications
9 with an other of said first and second communications nodes on said
10 respective first and second communications networks;

11 determining, by said signaling agent, an identity of said one of said first and
12 second communications nodes from said signaling message;

13 querying, by said signaling agent, a database to determine an internal IP address
14 and a port number for signaling one of said first and second
15 communications nodes;

16 modifying, by said signaling agent, said destination address of said signaling
17 message; and
18 transmitting, by said signaling agent, said message to said other of said first and
19 second communications nodes.
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1 17. A method for permitting communications between a first communications node
2 attached to a first communications network, a second communications node attached
3 to a second communications network, and a network address translation device and a
4 firewall device on an interconnection path between said first communications
5 network and said second communications network, comprising:
6 receiving, by a signaling agent, a signaling message from one of said first and
7 second communication nodes on a respective first and second
8 communications network, a request for communications with said other of
9 said first and second communications nodes on said respective first and
10 second communications networks;
11 sending, by said signaling agent, a request message to said network address
12 translation device and said Firewall device to open a port on said firewall
13 device to allow communications between said first node and said second
14 node to traverse said network address translation device and said firewall
15 device;
16 opening, by said network address translation device and said firewall, said port on
17 said firewall and establishing a mapping between an internal address of
18 said port and an external address of said port, and providing said mapping
19 information to said signaling agent;
20 determining, by said signaling agent, said mapping established by said network
21 address translation device of said external address of said communications
22 to said internal address;
23 storing, by said signaling agent, said mapping information in memory; and
24 modifying, by said signaling agent, any address information in said signaling
25 messages for said communications so that said one of said first and second
26 communications nodes, learns said external address for sending
27 communications to said other of said first and second communications
28 nodes and said one of said first and second communications nodes learns
29 said internal address to use as said source address for sending
30 communications to said other of said first and second communications
31 nodes.
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1 18. The method of claim 17 wherein said step of opening uses UPnP.
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1 19. A method for permitting communications between a first communication node and a
2 second communication node comprising:

3 receiving a signaling message from said first communication node;
4 making a decision whether said signaling message needs to be modified in respect
5 to an originating address used by said first communication node to send
6 said signaling messages; and
7 in response to said decision, modifying said signaling message, transmitting said
8 signaling message to said second node.

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1 20. The method of claim 19 wherein said originating address comprises an IP address and
2 port number

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1 21. The method of claim 19 wherein said communications comprise: Voice over IP;
2 video over IP; instant messaging; access to conferencing bridges connecting multiple
3 communication nodes; and access to communications servers for deposit or retrieval
4 of stored communications.

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1 22. The method of claim 19 wherein said signaling messages comprise registration
2 requests; authentication requests; connection request, requests to modify a
3 connection, requests to terminate a connection.

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1 23. The method of claim 19 wherein modifying comprises changing at least one of:
2 source address; destination address; changing signaling protocol; changing signaling
3 methods; adding fields; deleting fields; modifying syntax; changing punctuation;
4 changing spelling; altering said communications signals such that said first
5 communication node can communicate without errors or failures with said second
6 communication node.

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1 24. A method for permitting communications between a first communication node and a
2 second communication node, comprising:
3 receiving, by an agent, signaling messages from said first communication node;
4 modifying, by said agent, said messages based on a signaling address said agent
5 uses to receive said signaling messages;
6 wherein said first communication node is configured to use a destination signaling
7 address for sending messages to a signaling agent; and
8 wherein said destination signaling address is configured on said first node based
9 on a protocol variant used by said first communication node.

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1 25. A method for communicating between a first communication node and a second
2 communication node comprising:

3 receiving, by an agent, signaling messages from said first communication node;
4 modifying, by said agent, said messages
5 and
6 transmitting, by said agent, signaling messages to said second communication
7 node.

1 26. The method of claim 25 wherein said modifying said messages is based on a
2 signaling address used to receive messages from said first communication node.

1 27. The method of claim 25 wherein said modifying said messages is based on said
2 signaling address used to transmit messages to said second communication node.